

We claim:

1. A substantially purified nucleic acid molecule, said nucleic acid molecule capable of specifically hybridizing to a second nucleic acid molecule having a nucleic acid sequence selected from the group consisting of SEQ ID NO: 1 through SEQ ID NO: 36935 or complement or fragment thereof.

2. The substantially purified nucleic acid molecule according to claim 1, wherein said nucleic acid molecule comprises a microsatellite sequence.

3. The substantially purified nucleic acid molecule according to claim 1, wherein said nucleic acid molecule comprises a region having a single nucleotide polymorphism.

4. The substantially purified nucleic acid molecule according to claim 1, wherein said nucleic acid molecule comprises a nucleic acid molecule having a nucleic acid sequence selected from the group consisting of SEQ ID NO: 1 through SEQ ID NO: 36935 or complement thereof.

5. The substantially purified nucleic acid molecule according to claim 4, wherein said nucleic acid molecule further comprises a bacterial ORI site.

6. The substantially purified nucleic acid molecule according to claim 1, wherein said nucleic acid molecule has a promoter or partial promoter region.

7. The substantially purified nucleic acid molecule according to claim 6, wherein said promoter region comprises a CAAT cis element and a TATA cis element and an additional cis element.

8. A substantially purified nucleic acid molecule comprising a nucleic acid molecule or fragment thereof having a pair of defined ends, wherein said pair of defined ends are selected from the defined ends in Table A.

9. The substantially purified nucleic acid molecule according to claim 8, wherein said molecule comprises a nucleic acid molecule having one or two of said defined ends.

10. The substantially purified nucleic acid molecule according to claim 9, wherein said molecule comprises a nucleic acid molecule having two of said defined ends.

11. A substantially purified protein or fragment thereof encoded by a first 5 nucleic acid molecule which specifically hybridizes to a second nucleic acid molecule, said second nucleic acid molecule having a nucleic acid sequence selected from the group consisting of SEQ ID NO:1 through SEQ ID NO:36935 or complements thereof.

12. A transformed plant having a nucleic acid molecule which comprises:

10 (A) an exogenous promoter region which functions in a plant cell to cause the production of a mRNA molecule; which is linked to

(B) a structural nucleic acid molecule, wherein said structural nucleic acid molecule is selected from the group consisting of SEQ ID NO:1 through SEQ ID NO:36935 or complements thereof or fragment of either; which is linked to

15 (C) a 3' non-translated sequence that functions in a plant cell to cause termination of transcription and addition of polyadenylated ribonucleotides to a 3' end of said mRNA molecule.

13. The transformed plant according to claim 12, wherein said structural nucleic acid molecule is in the antisense orientation.

14. The transformed plant according to claim 12, wherein said plant is a dicot.

20 15. The transformed plant according to claim 12, wherein said plant is a monocot.